

parameter is determined, and, depending on the determined packet stream parameter, either an extended update packet containing information about the irregular change of the packet stream or an extended non-update packet containing information about the irregular change of the packet stream is transmitted. The present invention provides that the extended non-update packet is not used to update the context.

Claim 1 recites the method of the present invention, and claim 11 recites the apparatus of the present invention.

Claim 1 recites the method as comprising, in part, transmitting at least one update packet which updates the context, and transmitting at least one non-update packet which does not update the context. Claim 1 also recites the method as comprising detecting whether there is an irregular change of the packet stream, and determining at least one packet stream parameter. Furthermore, claim 1 recites the method as comprising transmitting, depending on the determined packet stream parameter, either an extended update packet containing information about the irregular change or an extended non-update packet containing information about the irregular change. Claim 1 further recites that the extended non-update packet is not used to update the context.

Claim 11 recites the apparatus as comprising, in part, a transmission unit for transmitting at least one update packet containing data indicating the context, where the transmission unit is adapted to transmit at least one non-update packet. The apparatus of claim 11 as comprises a detection unit for detecting an irregular change of the packet stream, and a control unit for determining at least one packet stream parameter. Furthermore, claim 11 defines the transmission unit as being operable to, depending on the determined at least one packet stream parameter, transmit either an extended update packet containing information about the irregular change or an extended non-update packet containing information about the irregular change. Claim 11 further recites that the extended non-update packet is not used to update the context.

Accordingly, claims 1 and 11 each recite a two-step process for determining whether to transmit an extended update packet or an extended non-update packet if an irregular change of the packet stream is detected. First, at least one packet stream parameter is determined. Then, depending on the obtained packet stream parameter, it is decided whether to transmit an extended update packet containing information about the

irregular change or an extended non-update packet containing information about the irregular change, where the extended non-update packet is not used to update the packet.

Thus, the method of claim 1 and the apparatus of claim 11 are each defined to transmit either an extended update packet or an extended non-update packet depending on the determined at least one packet stream parameter. Accordingly, the method of claim 1 and the apparatus of claim 11 positively recite that both an extended update packet and an extended non-update packet are able to be sent, but which one of these packets is sent is based on the determined at least one packet stream parameter.

Therefore, the method of claim 1 and the apparatus of claim 11 each possess the capability to transmit both the extended update packet and the extended non-update packet, even though one of these packets is transmitted depending on the at least one packet stream parameter. Accordingly, full patentable weight must be given to transmitting both an extended update packet and an extended non-update packet, since the method of claim 1 and the apparatus of claim 11 are principally capable of transmitting both of these packets.

Chuah discloses an apparatus and method for compressing a GTP/UDP/IP header (GTP header) and/or an RTP/UDP/IP header (RTP header) of a data packet in a mobile transmission system such as UMTS (Universal Mobile Telecommunications System) between two peers, e.g., mobile station (MS) 205 and IP End Host 240 (see Column 1, lines 51-60, Column 2, lines 25-26, Column 2, line 66 to Column 3, line 7, and Figure 1). Chuah focuses on header compression of a GTP/UDP/IP protocol stack (see Column 1, lines 44-51). In particular, Chuah discloses that the compression of GTP/UDP/IP headers is used to minimize the overhead resulting from the GTP tunnels typically used to forward data between the GGSN and RNC (or SGSN and RNC) of the UMTS network (see Figure 5, Column 1, lines 52-61, and Column 3, lines 47-55).

In addition to the compression of GTP/UDP/IP headers on the GTP tunnels between the core network elements and the RNC, the headers of tunneled data (for example, data using a RTP/UDP/IP protocol stack) may also be compressed on an end-to-end connection between the mobile station MS 205 and the IP-end host 240 illustrated in Figure 5, by using RTP/UDP/IP header compression (see Column 2, lines 60-62, and Column 2, line 66 to Column 3, line 20).

Thus, the focus of Chuah is the efficient combination of GTP header compression and RTP compression in the core network (see Column 1, lines 44-50).

The Examiner has referenced Column 5, lines 15-42 and Column 7, lines 12-42 in alleging that the method of claim 1 and the apparatus of claim 11 are anticipated by Chuah. However, as will be demonstrated below, these sections of Chuah, as well as other sections of Chuah relating to RTP header compression or GTP header compression, do not provide a reasonable basis to conclude that the inventions of claims 1 and 11 are anticipated by Chuah.

In items 6 and 8 of the Office Action, the Examiner appears to argue that the use of an “or” limitation in the recitation of transmitting either an extended update packet or an extended non-update packet in claims 1 and 11 is met by any reference which discloses either one of an extended update packet or an extended non-update packet. The Applicants respectfully submit that full patentable weight must be given to the transmission of both an extended update packet and an extended non-update packet according to the inventions defined in claims 1 and 11.

The second transmission operation recited in claim 1 and the transmission unit recited in claim 11 both recite that the transmission of either one of these two packets depends on the determined at least one packet stream parameter. Thus, the subject matter of claims 1 and 11 are limited to systems that are capable of deciding which packet to send (either an extended update packet or an extended non-update packet), which requires that such systems are principally capable of transmitting both packets. Thus, the Applicants respectfully submit that a system which can only transmit either an extended update packet or an extended non-update packet cannot reasonably be used by the Examiner in asserting that the inventions of claims 1 and 11 are unpatentable.

In item 2 on pages 2-3 of the Office Action, the Examiner opines that the determination of at least one packet stream parameter (as required by claims 1 and 11) is anticipated by Column 7, lines 12-20 of Chuah. In this section of Chuah, the fields of a compressed RTP header are summarized. The Examiner appears to argue that the inclusion of any of these fields in the compressed RTP header inherently includes the determination of at least one packet stream parameter.

As correctly indicated by the Examiner, the disclosure in Column 7 has to be read in view of the disclosure in Column 5, lines 12-44. Column 5, lines 24-29 of Chuah disclose that whenever there is a change in the RTP context, “the appropriate context update code” is used in the first byte of the compressed RTP header to indicate that the additional changed (or delta) information carried within the RTP compressed header.

Column 7 more particularly describes how to communicate the additional changed (or delta) information carried within the RTP compressed header. As shown in the caption of Figure 14 and as outlined in Column 7, lines 21-23, the Context Update Code field indicates which information is included in the RTP compressed header. Accordingly, the Context Update Code indicates the content of the RTP compressed header.

One skilled in the art understands that, typically, a compressed RTP header would consist of two bytes (the context update code byte and the M+timeclick byte – see Column 7, lines 23-25 and 28-30). In view of the disclosure of Column 5, lines 24-29 (as described above), Chuah clearly discloses that whenever there is a change in the RTP context, additional (or delta) information for updating the context is communicated. The presence of this additional (or delta) information in the compressed RTP header (an extension of the RTP header) is indicated by the “appropriate context update code” as described in the caption of Figure 14.

Accordingly, using the terminology of claims 1 and 11, Chuah discloses that a non-update packet (compressed RTP including the context update code byte set to zero and the M+timeclick byte) is transmitted, or, if there is a change in the context, an extended update packet is transmitted (compressed RTP including the context update code byte set to any value other than zero, the M+timeclick byte and the appropriate additional fields).

However, in contrast to the Examiner’s assertion in item 2 of the Office Action, Chuah does not teach, disclose or suggest the presence of an extended non-update packet containing information about the irregular change which is not used to update the receiver-side context, as required by the method of claim 1 and the apparatus of claim 11.

Therefore, claims 1 and 11 are not anticipated by Chuah since Chuah clearly fails to disclose transmitting an extended non-update packet containing information about an

irregular change, where the extended non-update packet is not used to update the context, as recited in claims 1 and 11.

By failing to disclose transmitting the non-update packet defined in claims 1 and 11, Chuah cannot reasonably be interpreted as disclosing or suggesting that a peer of the end-to-end connection between the MS 205 or the IP-end host 240 is capable of deciding which of two extended packets, i.e., an extended update packet or an extended non-update packet, is to be sent in response to a determined packet stream parameter, as recited in claims 1 and 11.

The transmission of extended update packets and extended non-update packets is an important feature of the present invention, as an object of the present invention is to allow for finding an adequate trade-off in compression efficiency and protocol robustness (see lines 24-28 on page 4 of the substitute specification).

Therefore, in addition to not being anticipated by Chuah, the inventions of claims 1 and 11 are also not obvious over Chuah since (1) Chuah fails to disclose or suggest each and every limitation of claims 1 and 11, and (2) Chuah does not even address or contemplate the object of the present invention and the effects achieved by the inventions of claims 1 and 11. That is, Chuah merely focuses on the efficient combination of GTP header compression and RTP header compression in the core network, whereas the inventions of claims 1 and 11 allow for an adequate trade-off in compression efficiency and protocol robustness since either an extended update packet containing information about the irregular change or an extended non-update packet containing information about the irregular change is transmitted, depending on a determined at least one packet stream parameter.

For at least the foregoing reasons, it is submitted that the clear distinctions discussed above are such that a person having ordinary skill in the art at the time the invention was made would not have been motivated to modify Chuah in such a manner as to result in, or otherwise render obvious, the present invention as recited in claims 1 and 11.

Accordingly, the Applicants respectfully submit that claims 1 and 11 are clearly patentable over Chuah.

In item 4 on page 5 of the Office Action, dependent claims 4 and 14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chuah in view of Le et al. (U.S. 6,782,047). As demonstrated above, Chuah clearly fails to disclose or suggest each and every limitation of claims 1 and 11. Namely, Chuah fails to disclose or suggest transmitting an extended non-update packet containing information about an irregular change, where the extended non-update packet is not used to update the context, as recited in claims 1 and 11.

In item 9 on pages 8-9 of the Office Action, the Examiner asserted that nonobviousness cannot be shown by attacking references individually where the rejections are based on a combination of the references. Despite the fact that claims 1 and 11 were not rejected as being obvious over Chuah and Le et al., the Examiner is respectfully reminded that to establish *prima facie* obviousness of a claimed invention under 35 U.S.C. 103(a), all of the claim limitations must be disclosed or suggested by the applied prior art. See CFMT, Inc. v. YieldUp Int'l Corp., 349 F.3d 1333, 1342, 68 U.S.P.Q.2D 1940, 1946-47 (Fed. Cir. 2003); In re Royka, 490 F.2d 981, 985, 180 U.S.P.Q. 580, 583 (C.C.P.A. 1974).

Similar to Chuah, Le et al. also fails to disclose or suggest transmitting an extended non-update packet containing information about an irregular change, where the extended non-update packet is not used to update the context, as recited in claims 1 and 11. Therefore, Le et al. cannot cure the deficiencies of Chuah for failing to disclose or suggest each and every limitation of claims 1 and 11.

Regardless of whether the clear deficiencies of Chuah or Le et al. are discussed individually or in combination, no obvious combination of Chuah and Le et al. would result in the inventions of claims 1 and 11, since Chuah and Le et al., either individually or in combination, fail to disclose or suggest transmitting the extended non-update packet defined in claims 1 and 11.

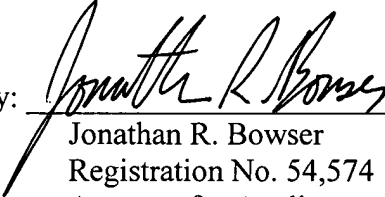
Therefore, it is submitted that the claims 1 and 11, as well as claims 2-10 and 12-20 which depend therefrom, are clearly allowable over the prior art as applied by the Examiner.

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. An early notice thereof is respectfully solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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February 15, 2006